

REMARKS

Please reconsider the application in view of the above amendment and the following remarks.

Disposition of Claims

Claims 1-3, 6-9, 11, and 13-28 are pending in this application. Claims 1, 7, 9, 14, 17, 20, 27, and 28 are independent. The remaining claims depend directly or indirectly on claims 1, 7, 9, 14, and 17.

Rejection(s) under 35 U.S.C § 103

Claims 1-3, 6-9, 11, 13-19, and 21-28 stand rejected under 35 U.S.C. § 103 (a) as obvious over U.S. Patent 6,233,622 (“Atsatt”) in view of U.S. Patent 6,529, 936 (“Mayo”) and further in view of U.S. Patent 5,995,975 (“Malcolm”). Claims 1, 7, 9, 14, and 17 have been amended by this reply to include the limitation, “wherein the data dictionary comprises at least one attribute-value pair.” Support for these amendments may be found, for example, on page 13 of the instant specification. To the extent that this rejection still applies to the amended and applies to the non-amended claims, this rejection is respectfully traversed.

Embodiments of the invention provide a method and framework for building web applications in a simple, modular, and scalable manner. More specifically, embodiments of the invention provide a set of objects with which simple and complex web applications may be built. By designing web applications using the set of objects (*i.e.*, server object, handler object, request object, and properties object) described in the

specification, web application developers will not only be able to streamline web application development due to the reduced complexity of programming using the modular framework disclosed in the present invention, but will also be able to create web applications on devices that were traditional excluded from web applications, such as digital thermometers, etc.

In addition by modularizing the web application, the web application may be designed to modularly process a request such that request is passed through a series of objects where each object performs a simple task and then forwards the request to the next module. As a result, the modular approach to processing a request allows the invention to be readily applied to simple web applications having basic functionality (performed by a small set of objects) and to complex web applications having complex functionality (performed by a large set of objects).

Specifically turning to claim 1, amended claim 1, recites a framework for creating an extensible web application. The framework includes a server object configured to receive a request for the extensible web application, a request object configured to be called by the server object upon receiving the request, a first handler object, configured to respond to the request using the request object, and a properties object comprising information used by the first handler object, the server object, and the request object to respond to the request, wherein the properties object includes a data dictionary. Further, the data dictionary comprises at least one attribute-value pair.

In particular, the attribute-value pairs located in the data dictionary provide the handler objects, server objects, the request objects, etc., with the necessary values for the attributes that may be required by the aforementioned objects. More specifically, the

attribute-value pairs typically correspond to global variables that are stored in a readily accessible location (*i.e.*, the data dictionary) which may be accessed by the handler object(s) currently processing a request from a client.

The Examiner admits that Atsatt does not teach or suggest a properties object as recited in claim 1. However, the Examiner asserted that Mayo discloses a properties object. The Applicant respectfully asserts that the properties **52-52n** shown in Mayo are not the same as the properties object recited in the claims. Specifically, each of the properties **52-52n** recited in Mayo corresponds to an “interface to a function” (Mayo, col. 8, ll. 10-12). Further, “the object **50** and its properties **52-52n** can be implemented using known programming language” (Mayo, col. 8, ll. 19-20). Thus, the object **50** and properties **52-52n** disclosed in Mayo are directed towards *executable program interfaces* that allow web server applications to interact/invoke the corresponding executable program.

In contrast, the properties object recited in amended claim 1 does not include interfaces to functions but rather includes a data dictionary containing attribute-value pairs that may be used by any handler object, server object, etc. More specifically, the data dictionary provides a location where attributes (*i.e.*, global variables) and the corresponding values may be stored and readily accessed by a handler object(s) currently processing a request from a client. Thus, Mayo does not disclose what Atsatt lacks.

Further, Malcolm does not disclose what Atsatt lacks. In particular, Malcolm teaches a method for accessing elements within a data structure using a dictionary based technique. Specifically, the purported “data dictionary” taught by Malcolm is merely a listing of the location of all elements within one or more data structures that have been

analyzed by the data structure analysis engine (*See* Malcolm, Abstract). The Applicant respectfully asserts that a listing of the location of all elements in one or more analyzed data structures is *not* equivalent to attribute-value pairs in the data dictionary recited in amended claim 1. Particularly, the data dictionary disclosed in amended claim 1 includes attributes (*i.e.*, global variables) and the corresponding values as opposed to a mere listing of elements in an analyzed data structure.

In view of the above, Atsatt, Mayo and Malcolm, whether viewed separately or in combination, fail to show or suggest the present invention as recited in amended claim 1. Thus, the claim 1, as amended, is patentable over Atsatt, Mayo, and Malcolm for at least this reason. Dependent claims are patentable for at least the same reasons.

Further, independent claims 7, 9, 14, and 17, have similar limitations with respect to the properties object amended as claim 1. Thus, independent claims 7, 9, 14, and 17, and claims depending therefrom, are also patentable for at least the same reasons as claim 1. Accordingly, withdrawal of this rejection is respectfully requested with respect to claims 1, 7, 9, 14, 17, and claim depending therefrom.

Claims 27 and 28 recite a method and framework, respectively, for processing a web request from a web application. The request is received by the server object that prompts the generation of a request object to manage processing of the request. The request is then forwarded to request handler that processes the request. The handler object processes the request by sequentially invoking a plurality of interior node handler objects, wherein each of the plurality of interior node handler objects processes a portion of the request to obtain a partial result. The partial result is subsequently stored in the properties object. Support for these claims may be found, for example, on page 17 of the

specification.

The Applicant respectfully asserts that neither Atsatt, Mayo, or Malcom whether viewed separately or in combination, show or suggest the present invention as recited in new claims 27 and 28. Specifically, Atsatt is directed towards providing an interface between a client and a particular application on a server. (*See* Figure 1 in Atsatt). In addition, as noted by the Examiner, Atsatt also discloses that a handler then may forward a request to another handler (*See* Atsatt, col.10. ll. 1-8). More specifically, Atsatt teaches that the *entire* request is transferred to from one handler to another. However, Atsatt does not teach or suggest a series of handlers that are chained together and configured to processes only a portion of the request to generate a partial result and then forward the partial result to a subsequent handler to process.

In view of the above, Atsatt does not teach or suggest a handler object invoking a series of interior node handler objects wherein each of the interior node handler objects *processes a portion of the request*. Further, in view of the above discussion of Mayo and Malcolm, it is clear that Mayo and Malcolm do not teach what Atsatt lacks. Thus, Atsatt, Mayo, and Malcolm, whether viewed separately or in combination, fail to show or suggest the present invention as recited in claims 27 and 28. Thus, claims 27 and 28 are patentable over Atsatt, Mayo, and Malcolm for at least this reason. Accordingly, withdrawal of this rejection is respectfully requested with respect to claims 27 and 28.

Claims 1-3, 6-9, 11, 13-19, and 21-28 stand rejected under 35 U.S.C. § 103 (a) as obvious over Patent 6,144,990 (“Brandt”) in view of Mayo and further in view of U.S. Malcolm. Claim 20 has been amended by this reply to include the limitation, “wherein

the data dictionary comprises at least one attribute-value pair.” Support for this amendment may be found, for example, on page 13 of the instant specification. To the extent that this rejection still applies, this rejection is respectfully traversed.

Claim 20, as amended, recites a method of communicating with a device. The method includes receiving a HTTP request from a requester, extracting request information from the HTTP request wherein the request information includes commands for interacting with the device, calling a handler object with the request information, invoking the commands on the device, receiving device information from the device, returning device information via HTTP to the requester, wherein the handler object uses information from a properties object, wherein the properties object includes a data dictionary.

The Examiner admits that Brandt does not teach or suggest a properties object as recited in claim 20. However, the Examiner asserted that Mayo discloses a properties object. The Applicant respectfully asserts that Mayo does not disclose the properties object as recited in amended claim 20 for at least the reasons discussed above with respect to amended claim 1. Further, Malcolm does not teach what Brandt lacks for at the same reasons as discussed above with respect to amended claim 1.

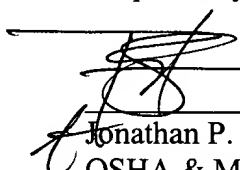
In view of the above, Brandt, Mayo, and Malcolm, whether viewed separately or in combination, fail to show or suggest the present invention as recited in the amended claim 20. Thus, the claim 20, as amended, is patentable over Brandt, Mayo, and Malcolm for at least this reason. Accordingly, withdrawal of this rejection is respectfully requested.

Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 16159.142001).

Date: 6/23/04

Respectfully submitted,


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